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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,852	11/14/2001	Bonne W. Posma	84738.000002	7994

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EXAMINER

LEYKIN, RITA

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/993,852

Applicant(s)

POSMA ET AL.

Examiner

Rita Leykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-35 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The subject matter of claims 1, 7, 16, 26 and 27 is, a braking controller that is provided for disabling the freewheeling diode for regenerative braking of the traction motor. The specification is pointed to the condition when the freewheeling diodes SCR 11 or SCR 42 are in a conducting stage, but not in the disabled stage.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franz, Jr. US # 4,471,277 and Slagle US # 4,549,119.

Considering the rejection under paragraph 112(1) and as best understood by the examiner the rejection of the above claims is as follows.

Franz, Jr. discloses a control circuit for dc traction motor including a regenerative braking, wherein, in Fig. 1 and 2 Franz, Jr. shows:

- A power supply circuit 10;
- A controllable freewheeling diode 20;
- A chopper portion of the control apparatus includes a main thyristor switch 14, operative with power supply 10 to regulate the current flow through the motor armature 12, the motor reactor 18, the motor field 26, the freewheeling diode 20, the commutation thyristor 19 and the commutation capacitor 21;
- The converter includes the plurality of thyristors 70, 72, 74 and 76 that are connected to the power supply circuit and having the output connection with freewheeling diode 20

Wherein, in the brake mode with thyristor 14 not conducting, the current will flow through the various components of the control system including freewheeling diode 20, (see column 2, lines 21-67 and column 3, lines 1-64). In column 5, lines 58-66 Franz, Jr. teaches that in brake operation, regeneration of current to the voltage source 10 is provided when the main thyristor 14 turns OFF.

Franz, Jr. does not disclose an AC power supply, however Slagle in his control system for operating traction motors shows in Fig. 4 AC voltage input to power supply 52.

Slagle also discloses two traction motors connected in parallel and able to be connected in series depending on detected slippage of wheels. Slagle also teaches a single SCR converter used in controlling parallel or series connection of two motors.

A switching device in form of relay contacts S and P1, P2 for parallel or series connection of the traction motors.

Individual voltages across the armature of motors TM1 and TM2 are inputs to SCR control 36, in order to affect SCR drive 24.

An operator commands block 34 that are fed through the logic circuit 36 to the SCR control circuit 38 which controls the firing angles of the phase controlled SCR's in drive 24, (see column 3, lines 30-59).

Examiner takes an official notice that the presence of slip detection device is inherent to Slagle teaching.

Hence, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine teachings of Franz, Jr. and Slagle to provide regenerative braking for traction motors based on the detected motor feedback by using a freewheeling diode in order to provide current back into voltage source.

The reason is regulate motor current and to provide current back to the supply line.

With respect to claimed DC/DC converter and according to claim language, examiner takes second official notice that this type of converter is well known in the art

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and presented by the examiner as example reference in prior art by Theurillat et al. U S # 5,847,520 or Itoh et al. US # 5,796,175.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita Leykin whose telephone number is (703)308-5828.

The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703)308-3370.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Rita Leykin  
Primary Examiner  
Art Unit 2837



R.L.  
March 13, 2003